Printer Protocol Interpreter STGL™

Programmer's Reference Manual for STGL,
a SATO® SGL® Printer Protocol Interpreter

Thermal Series Printers

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1 *Introduction*

About This Manual

This manual explains the differences between Printer Protocol Interpreter SATO® Graphic Language (STGL) Utility and the SATO printer language. If you have a SL5000r/T5000r printer use this manual with your *SL5000r™/T5000r™ User's Manual* for complete printer-protocol operation. If you have a SL4M™/T4M™ printer use this manual with your *SL4M/T4M User's Manual*.

Bi-Directional Communication

Thermal printers have several bi-directional protocols, which allow the host to establish a two-way communication with the printer. It allows the host to request printer status and operational information.

SL5000r/T5000r Printers

NOTE: Bi-directional communication is available through the serial, parallel, USB, and Ethernet interfaces.

To enable bi-directional communication the following conditions must be met:

- STGL emulation must be active.
- Set Comm. Protocol to Status 3 or Status 4 in the STGL Setup menu to enable bi-directional communication.

NOTE: The interface in which the status is returned is the same interface in which the data is received.

NOTE: If the Windows driver is used in combination with STGL, do not use bi-directional communication, use the Standard communication protocol setting.

SL4M/T4M Printers

NOTE: Bi-directional communication is available through the serial, parallel, USB, and Ethernet interfaces.

NOTE: If the Windows driver is used in combination with STGL, do not use bi-directional communication, use the Standard communication protocol setting.

To enable bi-directional communication the following conditions must be met:

- STGL emulation must be active.
- Select the interface for Ret. Status Port under the PRINTER SETUP menu. The options are Serial, E-Net Status Port, USB, IEEE 1284, Disable, and E-Net Data Port.

NOTE: For Ret. Status Port to display, set Admin User to Enable in the PRINTER SETUP menu.

- For Ethernet, select the Status Port Number in the INTERFACE menu, under the Printer Mgmt submenu. The Status Port Number default is 3001.

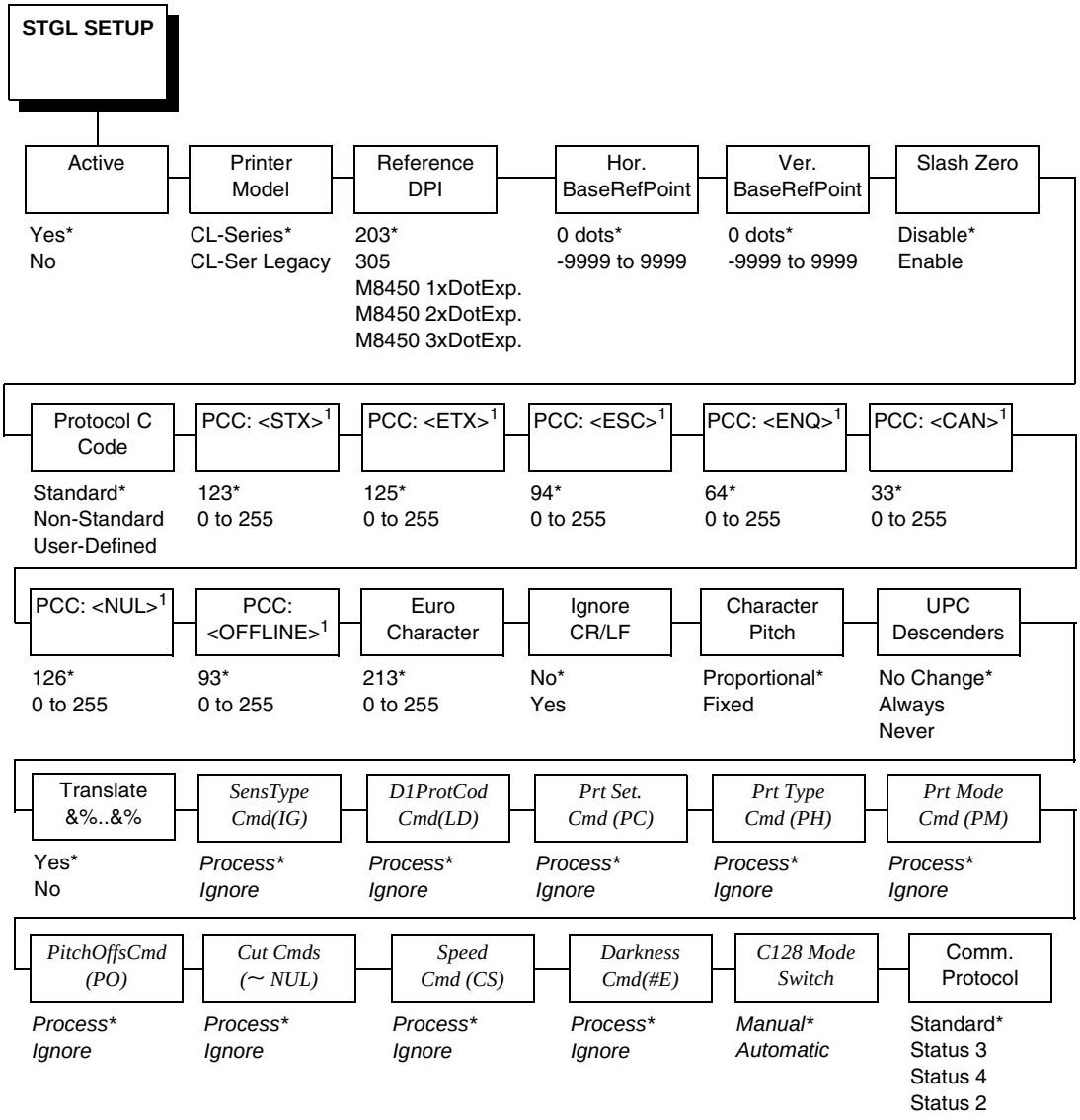
NOTE: For Printer Mgmt to display, set Admin User to Enable in the PRINTER SETUP menu.

Return Status Port

For protocols Status 2 to Status 5, configure the return status port. Use the “Ret. Status Port” submenu under the PRINTER SETUP menu.

NOTE: The return status port does not need to be the same as the active host interface on which data is received. For example, it is possible to receive data on the serial port, and send out the status through the Ethernet interface. Using Ethernet only, it is possible to return status through the port through which data was received (data port), but it is also possible to use another port for returning status (status port). The port number for the status port can be set through Interface ▸ Printer Mgmt ▸ Status Port Numb.

STGL SETUP Menu (SL5000r/T5000r)



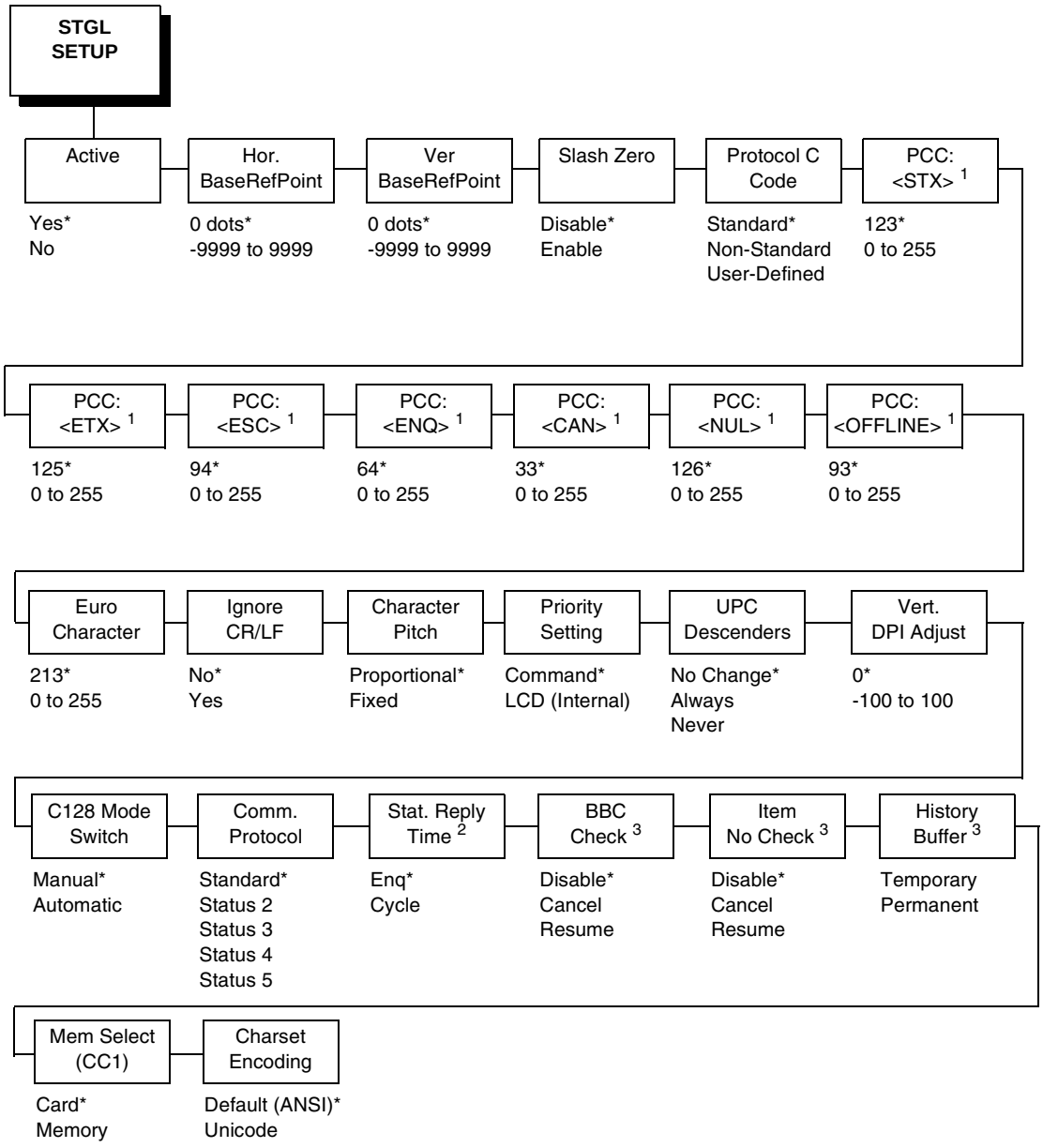
Notes:

* = Default

italicized items are available only when you enable Admin User in the PRINTER CONTROL menu.

[1] Items are available only when you enable User-Defined in the Protocol C. Code menu.

STGL SETUP MENU (SL4M/T4M)



Notes:

* = Default

The STGL Setup Menu is available only when you enable Admin User in the PRINTER SETUP menu.

[1] Items are available only when you enable User-Defined in the Protocol C. Code menu.

[2] Available only when Status 4 is selected in the Comm. Protocol menu.

[3] Available only when Status 5 is selected in the Comm. Protocol menu.

STGL SETUP Submenus

Active

Indicates if the STGL parser should process all incoming data, or that all data should be passed to the bottom emulation.

- **Yes** (default). STGL is active, process SATO commands.
- **No**. STGL is inactive, used to print pure text.

BCC Check (SL4M/T4M)

This setting defines how the emulation handles the BCC error detected in the data stream. This setting is available when the selected protocol is status 5.

- **Disabled** (default). No BCC error handling is performed.
- **Cancel**. On a BCC error the printer will go offline. When the user puts the printer back online, the item or job that has the BCC error automatically cancels.
- **Resume**. On a BCC error the printer will go offline. When the user puts the printer back online, the item or job that has the BCC error automatically resumes.

The status 5 commands to cancel or resume an item takes precedence over this setting. For example, if the host command is received before the user puts the printer back online, the printer will go back online and resume or cancel the item as defined by the host command.

Character Pitch

This selection allows you to set the default character pitch for the proportional Matrix & AutoSmoothing Fonts to either fixed character spacing or proportional character spacing. This command is overridden by the <ESC>PR or <ESC>PS Character Pitch Commands.

- **Proportional** (default). Print with proportional spacing.
- **Fixed Pitch**. Print with fixed-pitch spacing.

Charset Encoding

This menu allows the <RD> command to use UTF-8/Unicode as character set encoding.

- **Default (ANSI)** (default). The character set parameter in the <RD> command is used.
- **Unicode**. The character set parameter in the <RD> command is ignored, and Uniocde is used instead.

Code 128 Mode Switch

For compatibility with older Sato printers.

- **Manual** (default).
- **Automatic**. Encodes C128 barcode data using automatic mode switching which results in smaller barcodes.

Comm. Protocol (SL5000r/T5000r)

NOTE: This printer supports bi-direction communication through Serial, Parallel, USB, and Ethernet interfaces.

This setting defines the protocol used for serial communication.

- **Standard** (default). The standard communication protocol is used as configured in the Data Protocol menu (under the SERIAL PORT main menu).
- **Status 3**. SATO communication status 3 protocol.
- **Status 4**. SATO communication status 4 protocol.
- **Status 2**. SATO communication status 2 protocol.

NOTE: When using a protocol other than Standard over the serial interface, the Data Protocol setting of the Serial port interface should be set to DTR. Any other Serial Data Protocol would interfere with the SATO Status-Protocol.

Comm. Protocol (SL4M/T4M)

NOTE: This printer supports bi-direction communication through Serial, Parallel, USB, and Ethernet interfaces.

This setting defines the protocol used for bi-directional communication.

- **Standard** (default). The standard communication protocol is used as configured in the Data Protocol menu under INTERFACE menu ▶ Serial Port submenu.
- **Status 2**. SATO communication status 2 protocol.
- **Status 3**. SATO communication status 3 protocol.
- **Status 4**. SATO communication status 4 protocol.
- **Status 5**. SATO communication status 5 protocol.

NOTE: When selecting a protocol other than Standard, the Data Protocol setting of the Serial Port interface automatically sets to DTR. Any other Serial Data Protocol would interfere with the SATO Status-Protocol.

Cut Cmds (~,NUL) (SL5000r/T5000r)

Ignore all Cut Commands.

NOTE: SATO printers cut after each page per default when the Cut option is enabled.

With STGL, the default behavior is not to cut after each page, only upon receipt of a cut command. If this behavior is required, the Media Handling setting in the Media Control menu should be set to “Cut.” In addition, the STGL Cut Commands menu must be set to ignored.

Darkness Cmd (#E) (SL5000r/T5000r)

Ignore Darkness (Intensity) Commands.

DlProtCodCmd(LD) (SL5000r/T5000r)

Ignores downloading of user-defined Protocol Control Codes.

Euro Character

This selection allows the user to specify the hexadecimal code for the character which is replaced with the Euro Character. Default is 213 (0xD5).

- **213** (default)
- **0 – 255**. Character to replace with Euro Character.

History Buffer (SL4M/T4M)

This setting defines whether the history buffer is to be stored to non-volatile RAM. This setting is available only when the selected protocol is status 5.

- **Temporary** (default). The state of the history buffer will not be stored to NOVRAM. When the printer is turned off or looses power, the state of the history buffer will be lost. On power-up, the history buffer will initialize and be empty.
- **Persistent**. The history buffer is stored to non-volatile memory. When the printer is turned on after power down or loss, the history buffer will initialize with the values stored in NOVRAM.

Hor. BaseRefPoint

This setting changes the horizontal base reference point for all subsequent label jobs. Its effect is identical to the <ESC>A3 Base Reference point command.

- **0 dots** (default)
- **- 9999 to 9999**

Ignore CR/LF

This selection tells the printer to strip out all carriage return/line feed pairs (CRLF) from the data stream, except for Graphics and 2D bar code data. It is used primarily to maintain compatibility with earlier models of SATO printers.

- **No** (default). Allow CR/LF in the data stream.
- **Yes**. Remove all CR/LF from the data stream.

Item No Check (SL4M/T4M)

This setting defines how the emulation handles the Item No error detected in the data stream. This setting will only be available when the selected protocol is status 5.

- **Disabled** (default). Item No error handling is performed.
- **Cancel**. On an Item No error the printer will go offline and indicate the error on the front panel. When the user puts the printer back online, the item/job that has the BBC error will automatically cancel.
- **Resume**. On an Item No error the printer will go offline and indicate the error on the front panel. When the user puts the printer back online, the item/job that has the Item No error will automatically resume.

The status 5 command to cancel or resume an item will take precedence over this setting. E.g. if the host command is received before the user puts the printer back online, the printer will go back online and resume or cancel the item as defined by the host command.

Mem Select (CC1) (SL4M/T4M)

- **Card** (default). When selected, the “a” parameter within the STGL CCa command refers to the memory type as follows:

  1 = External Memory Cartridge

  2 = Flash ROM

- **Memory**. When memory is selected, the “a” parameter within the STGL CCa command refers to the memory type as follows:

  1 = Flash ROM

  2 = External Memory Cartridge

Printer Model (SL5000r/T5000r)

This setting indicates whether or not to emulate certain legacy models. These models have the following differences: Bolder M-Font and Larger WB-Font.

- **CL-Series** (default). Emulate current CL-Series models.
- **CL-Legacy**. Emulate older legacy printer models.

Priority Setting (SL4M/T4M)

This menu option allows the printer to ignore several configuration commands in host data. This allows using their corresponding front panel settings, without being overridden by host commands.

- **Command** (default)
- **LCD (Internal)**. Use front panel settings instead of the following commands: CS (Print Speed), #E (Print Darkness), A3 (Base Reference Point), IG (Sensor Type), PM (Print Mode), PH (Print Type).

PitchOffsCmd(PO) (SL5000r/T5000r)

Ignore Pitch Offset Command. Selects the PaperFeed shift setting.

Protocol C Code

Protocol Control Codes are the special control characters that prepare the printer to receive instructions. For example, the <ESC> character tells the printer that a command code will follow and the <ENQ> character asks for the printer status.

- **Standard** (default). Use the predefined Standard (non-printable) Protocol Control Codes.
- **Non Standard**. Use the predefined Non-Standard (printable) Protocol Control Codes.
- **User Defined**. New menu options will be unhidden to define hex-values for each Protocol Control Code Character.

Table 1. Protocol Control Codes

Control Char	Standard	Non-Standard	Description
STX	0x02	0x7B = {	Start of Data
ETX	0x03	0x7D = }	End of Data
ESC	0x1B	0x5E = ^	Command code to follow
NULL	0x00	0x7E = ~	Cutter command
ENQ	0x05	0x40 = @	Get printer status, Bi-Com mode
CAN	0x18	0x21 = !	Cancel print-job, Bi-Com mode
Off-Line	0x40	0x5d =]	Take printer offline

The <ESC>LD command (Custom Protocol Command Codes Download) will place the menu-setting in User-Defined mode, and overrides the user-defined character codes in the menu with the defined characters in the command.

Prt Mod Cmd(PM) (SL5000r/T5000r)

Ignore Print Mode Command. Selects continuous, cut, tear-off or peel-off print modes.

Prt Set. Cmd(PC) (SL5000r/T5000r)

Ignore Printer Setting Command. Allows changing several configuration options.

Prt Type Cmd(PH) (SL5000r/T5000r)

Ignore Print Type Command. Selects the Thermal Transfer or Direct Thermal print type.

Reference DPI (SL5000r/T5000r)

When parameters are defined as number of dots, these values translate to the actual printhead resolution as necessary. Graphics and downloaded bitmaps will not be scaled since this usually does not result in an image that is acceptable to users.

- **203** (default). Incoming parameters are assumed to be in 300 DPI. On a 300 DPI printer, they will be scaled.
- **305**. Incoming parameters are assumed to be in 305 DPI. On a 203 DPI printer, they will be scaled.

To provide compatibility with a M8450 printer, the following selections are available:

- **M8450 1xDotExp**. Incoming parameters area assumed to be in 300 DPI.
- **M8450 2xDotExp**. Incoming parameters area assumed to be in 150 DPI.
- **M8450 3xDotExp**. Incoming parameters area assumed to be in 100 DPI.

SensType Cmd(IG) (SL5000r/T5000r)

Ignores Sensor Type command. This command is used to select the Reflective/Transmissive/No Sensor.

Slash Zero

This parameter allows you to print the numeral “0” with or without the slash.

- **Disable** (default). Zero is printed without a slash.
- **Enable**. Zero is printed with a slash.

Speed Cmd (CS) (SL5000r/T5000r)

Ignore Speed Commands.

Status Reply Time (SL4M/T4M)

This setting defines when the emulation sends status responses. This setting only applies to the status 4 protocol, and will only be available when the selected protocol is status 4.

- **Enq** (default). The status is only sent on receipt of an ENQ command.
- **Cycle**. The status is sent out unsolicited (no ENQ command needed) every 750 mS.

Translate &%..&% (SL5000r/T5000r)

This setting allows replacing of the string *&%CC&%* by one single control character with a hex value equal to that of string CC.

- **No** (default). Hex Transparency option disabled.
- **Yes**. Hex Transparency option enabled.

This option might be extended in the future to use user-defined introducers.

UPC Descenders (SL5000r/T5000r)

Allows the user to force UPC/EAN barcodes to print with or without descenders.

- **No Change** (default). Use default behaviour, matching Sato.
- **Always**. Force UPC/EAN to print with Descenders.
- **Never**. Force UPC/EAN to print without Descenders.

Ver BaseRefPoint

This setting changes the Vertical base reference point for all subsequent label jobs. Its effect is identical to the <ESC>A3 Base Reference point command.

- **0 dots** (default)
- **9999 to 9999**

Vert. DPI Adjust

NOTE: Applies to SL4M/T4M printers only.

This option fine adjusts the resolution used to scale the page elements/ coordinates. In cases where the printed label length is incorrect, the vertical resolution value STGL uses for calculations can be fine adjusted by this menu between -100 and +100. Negative values result in a lower DPI value and thus a longer label. Positive values result in a higher DPI value, and thus a shorter label.

NOTE: The adjustment does not affect the size of images and downloaded bitmap fonts.

2 *Supported Commands*

General Commands

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SLxx/ Txx	
A	Start Code	Full	Full	page 27
A1aaaabbbb	Media Size	Full	Full	page 28
A Z	Form Feed	Full	Full	page 27
AOa	Auto Online	Not Supported	Full	page 27
AR	Normal Print Length	Full	Full	page 27
A3H-aaaa-Vbbbb	Base Reference Point	Full	Full	page 29
Babbcccd	Bar Codes	Partial	Full	page 29
BDabbcccd	Bar Codes	Partial	Full	page 29
BKaabbcddeeefffnn...n	PDF417	Partial	Full	page 29
BLn...n	Postbar	Not Supported	Full	page 29
BPn...n	Postnet	Partial	Full	page 29
BQabcc, (ddeeff,) g (hhhh) n	QR Codes	Full	Full	page 29
BTabbccddee	Bar Codes	Full	Full	page 30
BVa,b,c,ddddddddd,eee,fff,gg..g	Maxicode	Full	Full	page 30
BWaabbb	Bar Codes Expansion	Full	Full	page 30
BXaabbccddeeefffghh	Data Matrix	Full	Full	page 30
C	Repeat Label	Full	Full	page 30
CLa	Ignore CR/LF	Not Supported	Full	page 30
CSa	Print Speed Selection	Full	Full	page 30

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SLxx/ Txx	
Dabbcccd	Bar Codes	Full	Full	page 30
DCxx...x	Data Matrix	Full	Full	page 30
DNk,n~n	Data Command	Full	Full	page 30
DSmmm,n~n	Data Commands	Full	Full	page 30
Eaaa	Line Feed	Full	Full	page 30
EP	Print End Position	Not Supported	Full	page 30
EUaaabbn~n	EAN/UCC Composite Symbol	Full	Full	page 31
EX0	Expanded Print Length	Full	Full	page 31
Faaaabccccddee	Sequential Numbering	Full	Full	page 31
FC	Print Circle	Partial	Partial	page 31
FT	Print Triangle	Partial	Partial	page 31
FWaaHbbbb	Horizontal Line	Full	Full	page 31
FWaabbVcccHdddd	Box	Full	Full	page 31
FWccVddd	Vertical Line	Full	Full	page 31
FXaaabcccdddeee	Data Matrix	Full	Full	page 31
Gabbbccc(data)	Custom Graphics	Full	Full	page 31
GMaaaaa	BMP File	Full	Full	page 31
GPaaaaa	PCX File	Full	Full	page 31
Haaaa	Horizontal Position	Full	Full	page 32
IDaa	Store Job ID	Full	Full	page 32
IP0nn	EPC Code Write Designation	Full	Full	page 32
IP1	EPC Code Read Designation	Full	Full	page 32
J	Journal Print	Full	Full	page 32
Kab90cc	Recall Custom Designed Characters	Full	Full	page 32
Laabb	Character Expansion	Full	Full	page 32

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SLxx/ Txx	
LAa	Display Language	Not Supported	Full	page 32
LHa	Zero Slash	Not Supported	Full	page 32
M	Font Type	Full	Full	page 32
OA	Font Type	Full	Full	page 32
OB	Font Type	Full	Full	page 32
OL	Online Printer Status Change	Not Supported	Full	page 32
Paa	Character Pitch	Full	Full	page 33
PR	Fixed Font Spacing	Full	Full	page 33
PS	Proportional Font Spacing	Full	Full	page 33
Qaaaaaa	Print Quality	Full	Full	page 33
RDabb,ccc,dddn..n...n	Font Type	Full	Full	page 33
RFaabbbbn...n	Recalls and prints custom fonts and logos	Not Supported	Full	page 35
RK	RFID Write	Full	Full	page 35
RMaaaa,bbbb	Mirror Image	Full	Full	page 36
RZ	Message Print Register	Not Supported	Ignored	page 36
S	Font Type	Full	Full	page 36
Tabcc(data)	Store Custom Designed Characters	Full	Full	page 36
TMx	EPC Trade mark Print	Partial	Full	page 36
U	Font Type	Full	Full	page 36
Vbbbb	Vertical Position	Full	Full	page 36
WBa	Font Type	Full	Full	page 36
WDHaaaaVbbbbXcccc Ydddd	Copy Image Area	Full	Full	page 36
WKnn..n	Job Name	Full	Full	page 36
WLa	Font Type	Full	Full	page 36

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SLxx/ Txx	
XM	Font Type	Full	Full	page 36
XS	Font Type	Full	Full	page 36
XU	Font Type	Full	Full	page 36
X20	Font Type	Not Supported	Full	page 37
X21	Font Type	Not Supported	Full	page 37
X22	Font Type	Not Supported	Full	page 37
X23	Font Type	Not Supported	Full	page 37
X24	Font Type	Not Supported	Full	page 37
XBa	Font Type	Full	Full	page 37
XLa	Font Type	Full	Full	page 37
Z	Stop Code	Full	Full	page 37
%a	Rotate	Full	Full	page 37
$a,b,c,d	Vector Font	Partial	Full	page 37
$=(data)	Data for Vector Font	Partial	Full	page 37
#Ea	Print Darkness	Full	Full	page 37
(aaaa,bbbb	Reverse Image	Full	Full	page 38
&	Store Form Overlay	Full	Full	page 38
/	Recall Form Overlay	Full	Full	page 38
0 (zero)	Replace Data	Full	Full	page 38
*a	Clear Print Job(s) and Memory	Partial	Full	page 38
@	Off-Line	Full	Full	page 38
~aaaa	Cut Job	Full	Full	page 38
~Aaaaa	Cut	Full	Full	page 38
~B	Cut Last	Full	Full	page 38
2D10	PDF417	Full	Full	page 38
2D12	MicroPDF417	Full	Full	page 38
2D20	Maxicode	Full	Full	page 38
2D30	QR Code Mode2	Full	Full	page 38

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SLxx/ Txx	
2D31	QR Code Mode1	Full	Full	page 39
2D32	Micro QR Code	Full	Full	page 39
2D50	DataMatrix	Full	Full	page 39

Supported General Commands

A – Start Code

Begins all print jobs.

A Z – Form Feed

Feeds a blank tag or label.

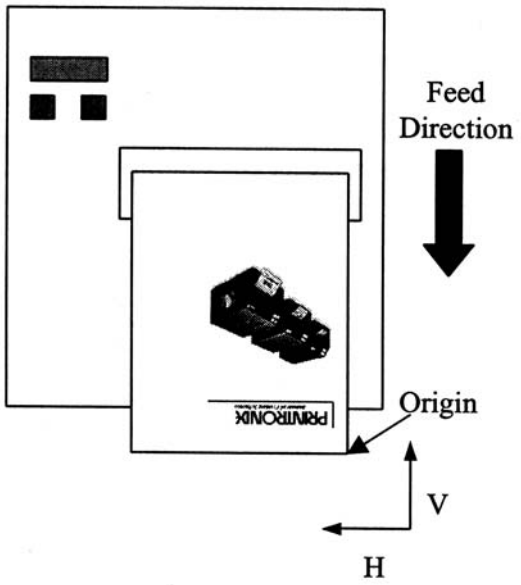
AOa – Auto Online

Sets the printer online automatically. If a = 0, the option is disabled.
If a = 1, the option is enabled.

AR – Normal Print Length

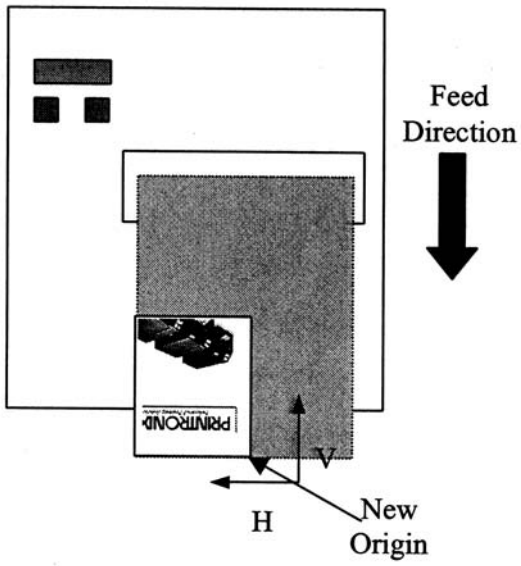
This command resets the printer to the Standard print length (7 inches).

Sato printers print labels similar to Printronix Thermal printers top-first, with the label-edge algined to the left side of the printer when viewed from the front. The coordinate origin of the label is per default located at the bottom-right.



A1aaaabbbb – Media Size

This command can be used to set the media size. It moves the default origin towards the left, and causes the page-bitmap to clip at the specified length. Without this command, the width is equal to the maximum width, and the length is the maximum length. The maximum length on SATO printers is by default 7 inches (<ESC>AR cmd), can be expanded to 49.2 inches with the <ESC>EX0 command.

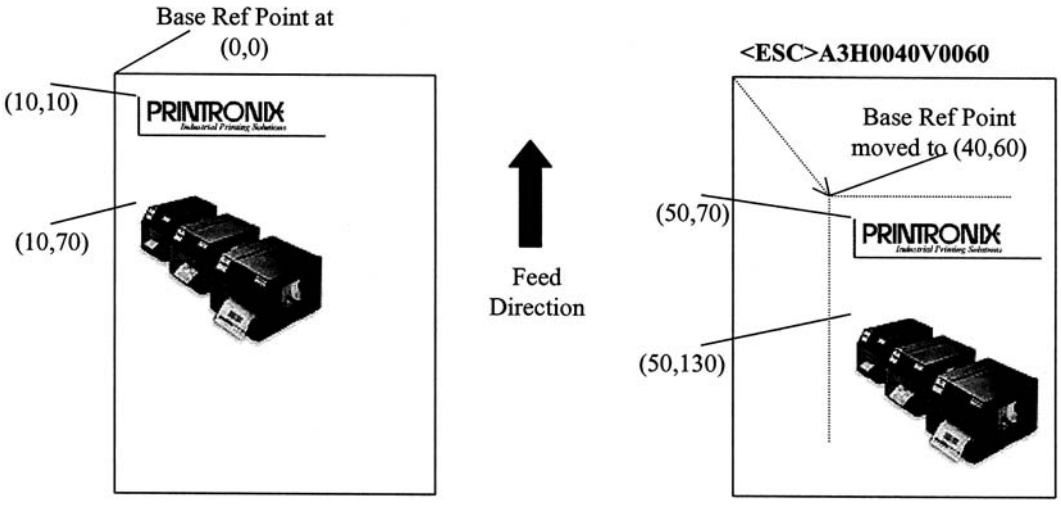


NOTE: STGL has the ability to set the maximum physical page-length in the Media-Size menu. This value is used when no AR, EX0 or A1 command is present in the host data. On continuous media, the actual printed page length depends on the size of the printed data. The printer will feed as long as there is data to print, up to a maximum of the current physical page length. On gapped media, the feed length is determined by the gap detection.

A3H-aaaa-Vbbbb – Base Reference Point

Establishes a new base reference point position in dots for the current label.

The base reference command repositions the page-bitmap inside the page created with the Media Size command by ading a horizontal and vertical offset to every positioning command. This offset is relative to the current Media Origin.



Babbcccd – Bar Codes

Prints a 1:3 ratio bar code.

BDabbcccd – Bar Codes

Prints a 2:5 ratio bar code.

BKaabbcddeeefffnn...n – PDF417

Prints PDF417 2-D symbols.

BLn...n – Postbar

Prints CPC 4-state Postbar bar codes.

BPn...n – Postnet

Prints Postnet bar codes.

BQabcc, (ddeeff,) g(hhhh)n – QR Code

Prints QRCode bar codes.

BTabbccddee – Bar Codes

Variable ratio.

BXaabbccddeeefffghh – Data Matrix

Data Format. Specifies the format of the Data Matrix 2-D symbology.

BVa,b,c,ddddddddd,eee,f f f,gg..g – Maxicode

Prints 2-D Maxicode symbols per AIM I.S.S. specifications.

BWaabbb – Bar Codes Expansion

Works together with the BT command to specifiy an expansion factor and the bar code height.

C – Repeat Label

Prints a duplicate of the last label printed.

CLa – Ignore CR/LF

Ignores carriage returns and line feeds.

CSa – Print Speed Selection

Specifies a unique print speed in inches/seconds through software for a particular label.

Dabbcccd – Bar Codes

Prints 1:2 ratio bar code.

DCxx...x – Data Matrix

Prints Data. Prints data using Data Matrix format specified in BX Data Format command.

DNk,n~n

Data for 2-D Barcode commands.

DSmmm,n~n

Data for 2-D Barcode commands.

Eaaa – Line Feed

Provides the ability to print multiple lines of the same character size without specifying a new print position for each line.

EP – Print End Position

Changes the Label Stop Position to use the media length setting when the gap sensor is disabled.

EUaaabbn~n – EAN/UCC Composite Symbol

Prints barcodes using <ESC>EU command.

EX0 – Expanded Print Length

Expands the print length to 9999 dots. See “A1aaaabbbb – Media Size” on page 28.

Faaaabccccddee – Sequential Numbering

Allows the printing of sequencing fields (text, bar codes) where all incrementing is done within the printer.

FC – Print Circle

Prints a circle. Patterns are not supported

FT – Print Triangle

Prints a triangle. Patterns are not supported.

FWaaHbbbb – Horizontal Line

Prints a horizontal line.

FWaabbVcccHdddd – Box

Prints a box.

FWccVddd – Vertical Line

Prints a vertical line.

FXaaabcccdddeee – Data Matrix

Sequential Numbering. Prints sequential numbered Data Matrix 2-D symbols.

Gabbbccc(data) – Custom Graphics

Allows the creation and printing of graphic images using a dot-addressable matrix. This image format is available in SATO printers, and is supported by STGL.

GMaaaaa – BMP File

Downloads BMP file to the internal graphics image memory. Standard BMP file format, only black and white non-compressed BMP files are supported. This image format is available in SATO printers, and is supported by STGL.

GPaaaaa – PCX File

Standard PCX file format. Downloads PCX file to the internal graphics image memory. This image format is available in SATO printers, and is supported by STGL.

Haaaa – Horizontal Position

From the base reference point, the number of dots horizontally.

IDaa – Store Job ID

Stores the Job ID number.

IP0nn – EPC Code Write Designation

Writes to the RFID tag without moving the paper unless there is printable data on the same label. SL5000r/T5000r commands follow the syntax for Sato printers. SL4M/T4M commands follows the syntax for newer printers.

IP1 – EPC Code Read Designation

The UHF RFID read command. SL5000r/T5000r commands follow the syntax for Sato printers. SL4M/T4M commands follows the syntax for newer printers.

J – Journal Print

Provides the ability to print text line by line.

Kab90cc – Recall Custom Designed Characters

Recalls for printing a custom character stored by the Tabcc(data) command.

Laabb – Character Expansion

Expands characters in both directions up to 12 times (all except raster and vector fonts).

LAa – Display Language

Selects the display language on the LCD.

LHa – Zero Slash

Sets the Zero Slash option. If a = 0, Zero Slash is disabled. If a = 1, Zero Slash is enabled.

M – Font Type

Specifies the 13W x 20H dot matrix font.

OA – Font Type

Specifies the OCR-A font dot matrix.

OB – Font Type

Specifies the OCR-B font dot matrix

OL – Online Printer Status Change

Changes the printer status from Offline to Online.

Paa – Character Pitch

Designates the number of dots between characters (all except raster fonts).

PR – Fixed Font Spacing

Returns the rpinter to fixed character spacing mode.

PS – Proportional Font Spacing

Places the printer in the proportional character spacing mode.

Qaaaaaa – Print Quality

Specifies the total number of labels to print.

RDabb,ccc,ddd,nn...n – Font Type (SL5000r/T5000r)

Specifies the internal AGFA raster fonts. The STGL Agfa fonts will match the SATO raster font characteristics. Using the SATO <ESC>RD command, one of two agfa fonts can be selected. It allows specification of both width and height of the font (in dots or as point-size) and whether it should be printed in bold/normal. The font-style can be either CG Times (16 999 dots or P08 - P72) or CG Triumvirate (16 -1 999 dots or P08 - P72).

RDabb,ccc,ddd,nn...n – Font Type (SL4M/T4M)

NOTE: By default some fonts are not present in the printer. Make sure the font is available in the printer before using it.

Allows printing of Scalable fonts (Agfa/TrueType) using the <ESC>RD command. It allows specification of both width and height of the font (in dots or as point size), and the character set.

a = Font Type ID as described in the Raster fonts Table 2.

b = Character Set ID as described in the Character sets Table 3.

c = Font Style is always 0 (zero).

d = Horizontal size: 004 to 999 dots/P02 to P99 points.

e = Vertical size: 004 to 999 dots/P02 to P99 points.

n = Print data.

Table 2. Raster Fonts

ID	Description	Typeface
A	CG Times	Agfa # 92500
B	CG Triumvirate	Agfa # 92244
F	Futura II Book	Agfa # 91810
P	CG Palacio	Agfa # 92532
S	CG Century Schoolbook	Agfa # 92546
G	CG Triumvirate Condensed	Agfa # 92246
V	UniversMedium	Agfa # 94021
t	CG Times (for legacy compatibility with CL)	Agfa # 92500
C	MkaiSO-Medium-U Simplified Chinese	TTF
c	MHeis-Bold-U Traditional Chinese (Not supported)	TTF
K	HYGungSo-Bold (Korean)	TTF
T	AngsanaUPC (Thai, Not supported)	TTF

NOTE: Only font A, B, and t are standard in the printer. The other fonts are only available on External Font Cartridges.

The following table lists the available character sets:

Table 3. Character Sets

ID	Description
0	CP-858
1	Latin1 ISO8859/1 Latin1
2	Latin2 ISO8859/2 Latin2
3	Latin5 ISO8859/9 Latin5
4	CP-737 DOSGreek
5	CP-855 DOSCyrillic
6	CP-864 DOS Arabic (Not supported)
7	CP-874 Thai (Not supported)
8	CP-850 Multilingual

RFaabbbbn...n – Recall and Print Custom Fonts and Logos

Recalls and prints fonts and logos downloaded with an exclusive tool which creates custom fonts and logos.

RK – RFID Write

Specifies data to be written into RFID tags.

<ESC>RK1,a,b,D16,c..c – RFID Write

a RFID tag Error Ignore. Valid range is from 0-9.
0-Disable (default when value is omitted)
1-Enabled
2-9 Auto retry on tag error.

This command is ignored for STGL. The error handling for all RFID commands on all supported emulations is set according to the RFID menu on the front panel. Using the RFID menu, the user can set the error handling, number of retries, and tag type.

b Write Protector Designation. Valid range is from 0 to 1.
0-Fixed (default)

D Writing Data Size Recognition Character. Writes data size in number of characters. Valid data size is 16 characters.

16 or 24 Specification of Writing Data Size. Valid data size is 16 or 24 characters.

c..c EPC data (fixed at 16 characters). Valid range is 0 to 9 or A to F only.

Example <ESC>RK1,0,0,D16,ABCDEF1234567543

RMaaaa,bbbb – Mirror Image

Prints mirror image of data.

RZ – Message Print Register

Defines RFID error handling.

S – Font Type

Specifies the 8W x 15H dot matrix font.

Tabcc(data) – Store Custom Designed Characters

Creates and stores custom characters or images in the printer's memory.

TMx – EPC Trade Mark Print

Specifies printing of an EPC trademark logo on a tag label.

NOTE: SL5000r/T5000r only prints Logo #0.

U – Font Type

Specifies the 5W x 9H dot matrix font.

Vbbbb – Vertical Position

From the base reference point, the number of dots vertically.

WBa – Font Type

Specifies the 18W x 30H dot matrix font.

WDHaaaaVbbbbXccccYdddd – Copy Image Area

To copy an image to another location of the label.

WKnn..n – Job Name

Stores the job name.

WLa – Font Type

Specifies the 28W x 52H dot matrix font.

XM – Font Type

Specifies the 24W x 24H dot matrix font.

XS – Font Type

Specifies the 17W x 17H dot matrix font.

XU – Font Type

Specifies the 5W x 9L dot matrix font.

X20 – Font Type

Specifies the 5W x 9L dot matrix font.

X21 – Font Type

Specifies the 17W x 17H dot matrix font.

X22 – Font Type

Specifies the 24W x 24L dot matrix font.

X23 – Font Type

Specifies the 48W x 48L dot matrix font.

X24 – Font Type

Specifies the 48W x 48L dot matrix font.

XBa – Font Type

Specifies the 48W x 48H dot matrix font.

XLa – Font Type

Specifies the 48W x 48H dot matrix font.

Z – Stop Code

Ends all print jobs.

%a – Rotate

Fixed Base Reference Point.

$a,b,c,d – Vector Font

Specifies printing of the unique SATO vector font. The SATO vector font allows for printing of the Helvetica Bold font in both proportional and fixed-pitch spacing, with a user-defined size of 50x50 – 999x999 dots.

SATO can also print this font in 10 different font variations.
For SL5000r/T5000r, STGL only supports variation 0 and 8 (Standard and Italic, Agfa font #92244). For SL4M/T4M, STGL supports all variations.
The other variations (several types of Outlined, Gray, Shadow, and Mirrored fonts) will print in the standard variation.

$=(data) – Vector Font Data

Data for vector fonts. See “$a,b,c,d – Vector Font” on page 37.

#Ea– Print Darkness

Specifies a new print darkness setting.

(aaaa,bbbb – Reverse Image

Reverse image from black to white and vice versa.

& – Store Form Overlay

Stores a specified label image in the printer's volatile form overlay memory.

/ – Recall Form Overlay

Recalls the label image from the printer's formoverlay memory for printing.

0 (zero) – Replace Data (Partial Edit)

Provides the ability to replace a specified area of the previous label with new data.

*a – Clear Print Job(s) and Memory

Clears individual memory and buffers. When parameter "a" is not specified, the command aborts all jobs received prior to this command.

NOTE: This is only supported on SL4M/T4M, and requires a non-standard Comm. Protocol menu setting.

@ – Off-Line

Signals the printer to go off-line after the completion of a print job.

~aaaa – Cut Job

Cuts labels at a specified interval in a print job.

~Aaaaa – Cut

Specifies the number of labels to print between each cut.

~B – Cut Last

Cuts any printed labels that remain in the printer.

2D10 – PDF417

Command for PDF417 symbology.

2D12 – MicroPDF417

Command for MicroPDF417 symbology.

2D20 – Maxicode

Command for Maxicode symbology.

2D30 – QR Code Mode2

Command for QR Code Mode2 symbology.

2D31 – QR Code Mode1

Command for QR Code Mode1 symbology.

2D32 – Micro QR Code

Command for Micro QR Code symbology.

2D50 – DataMatrix

Command for DataMatrix symbology.

Calendar Option Commands

The commands to set and use the real time clock (RTC) as defined in the SATO manual are fully supported by STGL if the RTC is installed. Clock and calendar commands are not functional if RTC is not installed.

NOTE: RTC is an option that must be installed to be fully supported by STGL.

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SL4M/T4M	
WA (elements)	Calendar Print	Full	Full	page 39
WPabbb	Calendar Increment	Full	Full	page 39
WTaabbccddee	Calendar Set	Full	Full	page 39

Supported Calendar Option Commands

WA(elements) – Calendar Print

Prints the data and/or time field (up to 16 characters) from the printer's internal clock.

WPabbb – Calendar Increment

To add a value to the printer's current date and/or time.

WTaabbccddee – Calendar Set

To set the time and date of the printer's internal clock.

Expanded Memory Option Commands

NOTE: For SL5000r/T5000r printers, information writes to Flash Memory. For SL4M/T4M printers, information writes to the internal flash or Expanded Memory Cartridge (EMC).

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SL4M/T4M	
BJ(aa..abb..b	Start TrueType Font Storage	Full	Full	page 41
BJDcccccddddee...e	Download Bitmapped TrueType Font Data	Full	Full	page 42
BJ)	End TrueType Font Storage	Full	Full	page 42
BJFaaaaaaa	Initialize Memory Card	Full	Full	page 42
BJRabbccddeeeeff..f	TrueType Font Recall	Full	Full	page 42
BJS	Expanded Memory Status	Ignore	Full	page 42
BJTaa,bb,cc,dd,ee,fff, gg..g	TrueType Font Recall	Full	Full	page 42
CCa	Memory Area Select	Ignore	Full	page 42
GCaaa	Recall BMP Graphic	Full	Full	page 42
GIabbbcccdddee...e	Store Custom Graphics	Full	Full	page 43
GRccc	Recall Custom Graphics	Full	Full	page 43
GTaaa,bbbbn..n..n	Store BMP Graphics	Full	Full	page 43
PIaaa,bbbbb,PIaaa,b bbbb,cc...c	Store PCX Graphics File	Full	Full	page 43
PYaaa	Recall PCX Graphics File	Full	Full	page 43
K1abbn..n	Recalls 16Wx16H User-defined Characters	Full	Full	page 43
K2abbn..n	Recalls 24Wx24H User-defined Characters	Full	Full	page 43
k1abbn..n	Recalls 16Wx16H User-defined Characters	Full	Full	page 43
k2abbn..n	Recalls 24Wx24H User-defined characters	Full	Full	page 43
YR,aaa/D,bb,cc..c	Recall Format/Field	Full	Full	page 43

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SL4M/T4M	
YS,aaa/Nbb,cc	Store Format/Field	Full	Full	page 43
&R,aa	Recall Form Overlay	Full	Full	page 43
&S,aa,bbbb,cccc	Store Form Overlay	Full	Full	page 44
*a,bbb	Clear Card Memory	Full	Full	page 44

Supported Expanded Memory Option Commands

BJ(aa..abb..b – Start TrueType Font Storage

Prepares the Expanded Memory to accept TrueType font data.

Expanded Memory Functions

SATO printers with expanded memory installed can store the following items for later use. Each item is addressable with a unique number, specifying a memory location in a specific section reserved for the same object types.

- 999 SATO graphic files Location # 001 - 999
- 999 BMP or PCX files Location # 001 - 999
- 999 Formats Location # 001 - 999
- 99 Form-Overlays Location # 01 - 99
- 100 Bit-Mapped TrueType Fonts Location # 00 - 99

On SATO printers, these objects can be stored in two selectable designated memory areas:

1. PCMCIA Expanded Memory Card
2. Internal Expanded Flash-ROM

In STGL both areas refer to the same flash file system (SL5000r/T5000r only). Therefore, the command to select the memory area (<ESC>CC a) will be ignored. Images and objects will be saved using the following names:

TrueType bitmap fonts	STGL_tnn.bmp	where nn is the ID, 00-99
BMP images	STGL_nnn.bmp	where nnn is the ID, 001-999
PCX images	STGL_nnn.pcx	where nnn is the ID, 001-999
Custom graphics images	STGL_nnn.img	where nnn is the ID, 001-999
Formats	STGL_nnn.fmt	where nnn is the ID, 001-999
Overlays	STGL_nnn.ovl	where nnn is the ID, 001-999

Examples

ppi4_t03.bmp (in flash) TrueType bitmapped font at location 03.

ppi4_012.pcx (in flash) PCX image at location 12.

For SL5000r/T5000r printers, the command to print the expanded memory status (<ESC>BJS) is ignored. However, the user can view the flash contents by using the “Print File List” feature from the “Printer Control” menu. This shows the STGL files present in the flash file system using the names listed above.

BJDccccddddee...e – Download Bit Mapped TrueType Font Data

Downloads the bitmapped TrueType font data to the memory area specified.

BJ) – End TrueType Font Storage

Ends the bitmapped TrueType font storage process. See “Expanded Memory Functions” on page 41.

BJFaaaaaaaa – Initialize Memory Card

Initializes the Memory Area and formats it for use. See “Expanded Memory Functions” on page 41.

BJRabbccddeeeeff..f – TrueType Font Recall

Recalls a previously stored bitmapped TrueType font for use. See “Expanded Memory Functions” on page 41.

BJS – Expanded Memory Status

Reports the status of the currently active Memory Card to the host by printing a status label.

BJTaa,bb,cc,dd,ee,ff,gg..g – TrueType Font Recall

Recalls a previously stored bitmapped TrueType font for use. See “Expanded Memory Functions” on page 41.

CCa – Memory Area Select

Selects the memory area for all following Expanded Memory commands. This command is ignored on T5000r/SL5000r. For SL4M/T4M, CC1 selects the EMC and CC2 selects the internal flash.

GCaaa – Recall BMP Graphic

Recalls BMP graphic files stored in Expanded Memory. See “Expanded Memory Functions” on page 41.

Glabbbcccdddee...e – Store Custom Graphics

Stores a graphic mage in the memory card to be called later for printing on a label. See “Expanded Memory Functions” on page 41.

GRccc – Recall Custom Graphics

Recalls for printing the graphic image stored by the GI command. See “Expanded Memory Functions” on page 41.

GTaaa,bbbbb,nn...n – Store BMP Graphics

Stores BMP files in Expanded Memory. See “Expanded Memory Functions” on page 41.

K1abbn..n – Recalls 16Wx16H User-Defined Characters

Recalls 16Wx16H user-defined characters and prints the string in horizontal orientation.

K2abbn..n – Recalls 24Wx24H User-Defined Characters

Recalls 24Wx24H user-defined characters and prints the string in horizontal orientation.

k1abbn..n – Recalls 16Wx16H User-Defined Characters

Recalls 16Wx16H user-defined characters and prints the string in vertical orientation.

K2abbn..n – Recalls 24Wx24H User-Defined Characters

Recalls 24Wx24H user-defined characters and prints the string in vertical orientation.

Plaaa,bbbbb,Plaaa,bbbbb,cc...c – Store PCX Graphics File

Stores a PCX graphics file. See “Expanded Memory Functions” on page 41.

PYaaa – Recall PCX Grphics File

Recalls a PCX graphics file. See “Expanded Memory Functions” on page 41.

YR,aaa/D,bb,cc...c – Recall Format/Field

To recall a field from a format previously stored in the memory card.

YS,aaa/Nbb,cc – Store Format/Field

To store a field in a format in the memory card. See “Expanded Memory Functions” on page 41.

&R,aa – Recall Form Overlay

Recalls a label image previously stored in Expanded Memory. See “Expanded Memory Functions” on page 41.

&S,aa,bbbb,cccc – Store Form Overlay

Stores a label image in Expanded Memory. See “Expanded Memory Functions” on page 41.

*a,bbb – Clear Card Memory

Clears individual memory and buffer areas. See “Expanded Memory Functions” on page 41.

Printer Configuration Commands

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SLxx/ Txx	
I2abcde	Serial Interface	Ignored	Partial	page 44
IGa	Sensor Type	Full	Full	page 44
LD,a,b,c,d,e,f,g,i,j j	Download Protocol Command Codes	Full	Full	page 44
PCaa,bbPFC,a,.....z	Printer Setting	Partial	Partial	page 45
PHa	Print Type	Full	Full	page 45
PMa	Print Mode	Full	Full	page 45
POabcc	Pitch Offset (Ignored Command)	Ignored	Ignored	page 45

Supported Printer Configuration Commands

I2abcde – Serial Interface

Sets the operating parameters for the Serial RS232 interface.

IGa – Sensor Type

Selects the sensor type.

LD,a,b,c,d,e,f,g,i,j j – Download Protocol Command Codes

Downloads a user defined set of Alternate Protocol Command Codes. See “Protocol C Code” on page 19.

PCaa,bbPCF,a,.....z – Printer Setting

Sets the default printer configuration in Flash ROM. The host commands to modify configuration settings will modify the current configuration values as if the user changed them manually on the front panel. They will however not be saved to NOVRAM as the SATO printer does. It will be the user's responsibility to save the approprite configuration as well as the power-up configuration.

PHa – Print Type

Selects the thermal printing method.

PMa – Print Mode

Selects desired backfeed operation.

POabcc – Pitch Offset

Sets the pitch type, direction, and offset to be used.

Legacy Commands

Command	Command Description	Support		Reference
		SL5000r/ T5000r	SL4M/T4M	
AX	Expanded Print Length	Full	Full	page 45
N	Rotate	Full	Full	page 45
R	Rotate	Full	Full	page 45

Supported Legacy Commands

AX – Expanded Print Length

This command sets the printer to the Expanded print length (14 inches). EX0 is the recommended replacement.

N – Rotate, Moving Base Reference Point

Sets the original base reference point and returns printing to normal orientation. % is the recommended replacement.

R – Rotate, Moving Base Reference Point

Rotates the printing of all subsequent images by 90 degrees counterclockwise each time it is used. Also moves the base reference point, % is the recommended replacement.

Downloadable Fonts

The Sato printer allows downloading and storing of TrueType fonts as Bitmap. By default, since Printronix printers have internal flash installed, STGL supports downloading of bitmapped TrueType fonts to flash. Sato's memory card manager utility (MC manager) must be used to convert files in TrueType font format (.ttf extension) to the proprietary bitmap formats that SATO printers use to download the fonts.

ID for the fonts is not assigned via the command. The printer assigns the first unused ID itself. For instance, if fonts with IDs 00 and 01 already exist, a new downloaded font is assigned ID 02.

How the SATO printer re-issues IDs of deleted fonts is unknown. For example, a new download on a printer where fonts 1 and 2 were deleted after installing fonts 0 to 3 resulted in assigning ID 2 to the new font. Downloading another font did not result in re-using ID number 1, but ID number 4. To obtain IDs in the order they were downloaded (starting at 00), always initialize the flash memory before downloading, and then download all the required fonts.

STGL uses the first unused ID.

Custom Designed Characters

Allows for the creation, storage, and printing of custom characters, such as special fonts or logos. Up to 50 individual characters may be stored in the custom character volatile memory. Allowable sizes include 16x16 and 24x24 dot matrices.

Image Manipulation

Three commands are available to manipulate a rectangular area of the page bitmap. It can *copy* an area to another section on the page, *reverse* an area and *mirror* an area.

3 *Printer Configuration*

SATO printers have four ways of configuring the operational parameters printer settings:

- dip switches
- potentiometers
- LCD menu settings
- commands in the data stream.

The host commands to modify configuration settings will modify the current configuration values as if the user changed them manually on the front panel.

NOTE: Unlike the SATO printers, the modified configuration settings will not be saved to NOVRAM. It is the user's responsibility to save the appropriate configuration and the power-up configuration.

Configuration Setting Compatibility

The available printer control menu settings is used and non-existent settings are added to a new STGL menu to emulate all settings that can be supported.

The following sections list the SATO configuration setting along with a description of its behavior on SATO printers, and the corresponding Printronix menu setting.

PotentioMeters

- SATO setting: PRINT
  Potentiometer to adjust print darkness.
  Printronix setting:
  SL5000r/T5000r: MEDIA-CONTROL ▶ Print Intensity
  SL4M/T4M: MEDIA SETUP ▶ Print Intensity
- SATO setting: OFFSET
  Potentiometer to adjust the amount of backward/forward feed for dispenser/ cutter/tear-off bar position (+/- 3.75 mm).
  Printronix setting:
  SL5000r/T5000r: MEDIA-CONTROl ▶ Paper Feed Shift
  SL4M/T4M: MEDIA SETUP ▶ Tear Off Adjust

- SATO setting: PITCH
  Potentiometer to adjust home position of the label (+/-3.75 mm). Affects stop position of the label feed, print position, and dispense position.
  Printronix setting:
  SL5000r/T5000r: MEDIA-CONTROL ▶ Ver Image Shift
  SL4M/T4M: MEDIA SETUP ▶ Ver Image Shift

DIP Switches

- SATO setting: DSW1
  Serial Port Settings
  Printronix setting:
  SL5000r/T5000r: SERIAL PORT menu
  SL4M/T4M: INTERFACE ▶ Serial Port
- SATO setting: DSW2-1
  Print Mode Selection. Selects between direct thermal printing on thermally sensitive paper and thermal transfer printing using a ribbon.
  Printronix setting:
  SL5000r/T5000r: MEDIA CONTROL ▶ Print Mode
  SL4M/T4M: MEDIA SETUP ▶ Print Mode
- SATO setting: DSW2-2
  Sensor Type Selection. Selects between the use of a label gap or a reflective Eye-Mark detector.
  Printronix setting:
  SL5000r/T5000r: CALIBRATE CONTROL ▶ Gap/Mark Sensor
  SL4M/T4M: SENSOR SETUP ▶ Gap/Mark Sensor
- SATO setting: DSW2-4
  Hex Dump Selection. Selects Hex Dump Mode.
  Printronix setting:
  SL5000r/T5000r and SL4M/T4M: DIAGNOSTICS ▶ Hex Dump Mode
- SATO setting: DSW2-6
  Firmware Download. Places the printer in the Firmware Download mode for downloading new firmware into flash ROM.
  Printronix setting: Download Mode/PPM
- SATO setting: DSW2-7
  Protocol Code Selection. Selects the Standard or Non-Standard command codes used for protocol control.
  Printronix setting:
  SL5000r/T5000r and SL4M/T4M: STGL SETUP ▶ Protocol C Code
- SATO setting: DSW3-1, DSW3-2
  Backfeed Sequence. Backfeed is used to correctly position the label for application and then retract the next label to the proper print position. Possible modes are Continuous, Tear-Off Strip, Peel Off, and Cut.
  Printronix setting:
  SL5000r/T5000r: MEDIA CONTROL ▶ Media Handling
  SL4M/T4M: MEDIA SETUP ▶ Media Handling

- SATO setting: DSW3-3
  Label Sensor Selection. Enables or disables the Label Sensor.
  Printronix setting:
  SL5000r/T5000r: CALIBRATE CONTROL ▶ Gap/Mark Sensor
  SL4M/T4M: SENSOR SETUP ▶ Gap/Mark Sensor
- SATO setting: DSW3-4
  Back-Feed Selection. When Back-Feed is enabled, the printer positions the last printed label for dispensing and retracts it before priting the next label.
  Printronix setting:
  SL5000r/T5000r: MEDIA CONTROL ▶ Media Handling
  SL4M/T4M: MEDIA SETUP ▶ Media Handling
- SATO setting: DSW3-5
  EXT Print Start Signal Selection. Allows an external device to initiate a label print for synchronization with the applicator.
  Printronix setting:
  SL5000r/T5000r: Supported through GPIO
  SL4M/T4M: Not supported
- SATO setting: DSW3-6
  External Signal Type Selection.
  Printronix setting:
  SL5000r/T5000r: Supported through GPIO
  SL4M/T4M: Not supported
- SATO setting: DSW3-7
  Both the polarity and signal type (level or pulse) of the external print synchronizing signal can be selected.
  Printronix setting:
  SL5000r/T5000r: Supported through GPIO
  SL4M/T4M: Not supported
- SATO setting: DSW3-8
  Repeat Print via External Signal. Allows the applicator to reprint the last label of the print job.
  Printronix setting:
  SL5000r/T5000r: Supported through GPIO
  SL4M/T4M: Not supported

LCD Panel, Normal Mode

- SATO setting: PRINT DARKNESS
  Used to adjust the amount of heat (i.e. power) applied to the head for printing.
  Printronix setting:
  SL5000r/T5000r: MEDIA CONTROL ▶ Print Intensity
  SL4M/T4M: MEDIA SETUP ▶ Print Intensity
- SATO setting: PRINT SPEED
  Sets the print speed in inch/second.
  Printronix setting:
  SL5000r/T5000r: MEDIA CONTROL ▶ Print Speed
  SL4M/T4M: MEDIA SETUP ▶ Print Speed
- SATO setting: PITCH OFFSET
  The label Pitch is the distance from the leading edge of a label and the leading edge of the next label.
  Printronix setting:
  SL5000r/T5000r: MEDIA CONTROL ▶ Ver Image Shift
  SL4M/T4M: MEDIA SETUP ▶ Ver Image Shift
- SATO setting: CANCEL PRINT JOB
  If the printer has a print job(s) in memory, selecting YES will cause the job(s) to be cleared.
  Printronix setting:
  SL5000r/T5000r and SL4M/T4M: Cancel Key

LCD Panel, Advanced Mode

- SATO setting: Zero Slash
  This setting determines if a zero is printed with a slash or without a slash.
  Printronix setting: STGL SETUP ▶ Slash Zero
- SATO setting: AUTO ONLINE
  This setting determines the mode in which the printer powers up.
  Printronix setting:
  SL5000r/T5000r: PRINTER CONTROL ▶ Power-up State
  SL4M/T4M: PRINTER SETUP ▶ Power-up State
- SATO setting: PRINT OFFSET V PRINT OFFSET H
  This setting changes the base reference point for all subsequent label jobs. It's effect is identical to the <ESC>A3 Base Reference point command.
  Printronix setting:
  SL5000r/T5000r: STGL SETUP ▶ Hor. BaseRefPoint
  STGL SETUP ▶ Ver. BaseRefPoint

  SL4M/T4M: STGL SETUP ▶ Hor. BaseRefPoint
  STGL SETUP ▶ Ver.BaseRefPoint

- SATO setting: IGNORE CR/LF
  This selection tells the printer to strip out all carriage return/line feed pairs (CRLF) from the data stream, including graphics and 2D bar codes. It is used primarily to maintain compatibility with earlier models of SATO printers.
  Printronix setting: STGL SETUP ▶ Ignore CR/LF
- SATO setting: CHARACTER PITCH
  This selection allows you to set the default character pitch to either fixed character spacing or proportional character spacing. This command can be overridden by the <ESC>PR or <ESC>PS Character Pitch Commands.
  Printronix setting: STGL SETUP ▶ Character Pitch

LCD Panel, Card Mode

- SATO setting: CARD MODE
  The Card Mode allows the operator to manage the Expanded Memory (PCMCIA Card or Internal Expanded Flash ROM). Typical operations are copying data between cards, formatting cards.
  Printronix setting: Copying is supported by FlashFile upload in PPM.

LCD Panel, Service Mode

- SATO setting: GAP [X.X V] EYE [X.X V] INPUT [X.X V]
  This adjustment allows you to manually set the threshold voltage level, between the maximum and minimum light levels. If the value entered for the bottom line setting is “0.0V,” then the printer automatically calculates the setting when the first label is fed. This happens after the printer is powered on or the head is closed.
  Printronix setting:
  SL5000r/T5000r: CALIBRATE CONTROL ▶ Gap/Mark Tresh
  CALIBRATE CONTROL ▶ Auto Calibrate

  SL4M/T4M: SENSOR SETUP ▶ Gap/Mark Tresh
  SENSOR SETUP ▶ Run Auto-Cal
- SATO setting: ONLINE FEED
  This selection specifies whether or not the printer automatically feeds a blank label when it is placed in the Online mode.
  Printronix setting:
  SL5000r/T5000r: Supported through GPIO
  SL4M/T4M: Not supported
- SATO setting: FEED ON ERROR
  This selection specifies whether or not the printer feeds a blank label automatically when an error condition is cleared.
  Printronix setting:
  SL5000r/T5000r: Supported through GPIO
  SL4M/T4M: Not supported

- SATO setting: REPRINT W/FEED
  This selection specifies whether or not the printer will print the last printed label stored in memory when the FEED key is pressed in the Normal Online mode.
  Printronix setting:
  SL5000r/T5000r: Supported through GPIO
  SL4M/T4M: Not supported
- SATO setting: FORWARD/BACKFEED DISTANCE
  This display only appears when Backfeed is enabled (DSW3-4 = OFF)
  0 - 255 mm.
  Printronix setting:
  SL5000r/T5000r: MEDIA CONTROL ▶ Paper Feed Shift
  SL4M/T4M: MEDIA SETUP ▶ Tear Off Adjust
- SATO setting: EURO CODE
  This selection allows the user to specify the hexadecimal code for the character which is replaced with the Euro Character. Default is 0xD5.
  Printronix setting:
  SL5000r/T5000r and SL4M/T4M: STGL SETUP ▶ Euro Code
- SATO setting: SELECT LANGUAGE
  This selection allows the user to select the character set used by the printer LCD menu (English, French, German, Spanish, Italian, and Portuguese).
  Printronix setting:
  SL5000r/T5000r: PRINTER CONTROL ▶ Display Language
  SL4M/T4M: PRINTER SETUP ▶ Display Language
- SATO setting: PRIORITY SETTING
  This selection allows the user to assign a priority for CS (Print Speed), #5 (Print Darkness), A3 (Base Reference Point), IG (Sensor Type), PM (Print Mode), and PH (Print Type). If LCD is selected, the setting established via the LCD display/menu system is used for incoming label job, regardless of any different command settings. If Command is selected, any commands in the label job takes precedence and is used for printing the job. The LCD display reflects the new setting.
  Printronix setting:
  SL5000r/T5000r has menus to ignore each command separately (see page 13).
  SL4M/T4M: STGL SETUP ▶ Priority Setting

LCD Panel, Counter Mode

- SATO setting: SELECT COUNTER
  HD:Head Counter (should be reset when printhead is replaced).
  Printronix setting:
  SL5000r/T5000r: DIAGNOSTICS ▶ Head Print Dist
  SL4M/T4M: DIAGNOSTICS ▶ PrintHead Usage

  DSP: Dispense Counter
  CUT: Cutter Counter
  Printronix setting:
  SL5000r/T5000r: DIAGNOSTICS ▶ Ptr Media Dist
  SL4M/T4M: DIAGNOSTICS ▶ PrintHead Usage

  SATO setting: CNTR CLEAR
  LIFE: Life Coutner (cannot be reset)
  Printronix setting:
  SL5000r/T5000r and SL4M/T4M: DIAGNOSTICS ▶ Reset Head Data

LCD Panel, Test Print Mode

- SATO setting: TEST PRINT MODE
  This option allows you to print a test label.
  Printronix setting:

  SL5000r/T5000r: CONFIG. CONTROL ▶ Print Config
  DIAGNOSTICS ▶ Printer Tests

  SL4M/T4M: CONFIGURATION ▶ Print Config
  DIAGNOSTICS ▶ Print Tests

LCD Panel, Default Setting Mode

- SATO setting: DEFAULT SETTING
  Resets all printer configuration settings to their original default conditions.
  Printronix setting:
  SL5000r/T5000r: CONFIG. CONTROL ▶ Load setting ▶ Factory
  SL4M/T4M: CONFIGURATION ▶ Load setting ▶ Factory

A ASCII Codes

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
NUL	0	00	EM	25	19	2	50	32	K	75	4B
SOH	1	01	SUB	26	1A	3	51	33	L	76	4C
STX	2	02	ESC	27	1B	4	52	34	M	77	4D
EXT	3	03	FS	28	1C	5	53	35	N	78	4E
EOT	4	04	GS	29	1D	6	54	36	O	79	4F
ENQ	5	05	RS	30	1E	7	55	37	P	80	50
ACK	6	06	US	31	1F	8	56	38	Q	81	51
BEL	7	07		32	20	9	57	39	R	82	52
BS	8	08	!	33	21	:	58	3A	S	83	53
HT	9	09	+	34	22	;	59	3B	T	84	54
LF	10	0A	#	35	23	<	60	3C	U	85	55
VT	11	0B	$	36	24	=	61	3D	V	86	56
FF	12	0C	%	37	25	>	62	3E	W	87	57
CR	13	0D	&	38	26	?	63	3F	X	88	58
SO	14	0E	+	39	27	@	64	40	Y	89	59
SI	15	0F	(	40	28	A	65	41	Z	90	5A
DLE	16	10	)	41	29	B	66	42	[	91	5B
DC1	17	11	*	42	2A	C	67	43	\	92	5C
DC2	18	12	+	43	2B	D	68	44	]	93	5D
DC3	19	13	,	44	2C	E	69	45	^	94	5E
DC4	20	14	-	45	2D	F	70	46	_	95	5F
NAK	21	15	.	46	2E	G	71	47	`	96	60
SYN	22	16	/	47	2F	H	72	48	a	97	61
ETB	23	17	0	48	30	I	73	49	b	98	62
CAN	24	18	1	49	31	J	74	4A	c	99	63

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
d	100	64	k	107	6B	r	114	72	y	121	79
e	101	65	l	108	6C	s	115	73	z	122	7A
f	102	66	m	109	6D	t	116	74	{	123	7B
g	103	67	n	110	6E	u	117	75	|	124	7C
h	104	68	o	111	6F	v	118	76	}	125	7D
i	105	69	p	112	70	w	119	77	~	126	7E
j	106	6A	q	113	71	x	120	78		127	7F

B *Contact Information*

Printronix Customer Support Center

IMPORTANT **Please have the following information available prior to calling the Printronix Customer Support Center:**

- Model number
- Serial number (located on the back of the printer)
- Installed options (i.e., interface and host type if applicable to the problem)
- Configuration printout:

  Thermal Printer
  See “Printing A Configuration” in the *Quick Setup Guide*.
- Is the problem with a new install or an existing printer?
- Description of the problem (be specific)
- Good and bad samples that clearly show the problem (faxing or emailing these samples may be required)

Americas	(714) 368-2686
Europe, Middle East, and Africa	(31) 24 6489 410
Asia Pacific	(65) 6548 4114
China	(86) 800-999-6836

http://www.printronix.com/support.aspx

Printronix Supplies Department

Contact the Printronix Supplies Department for genuine Printronix supplies.

Americas	(800) 733-1900
Europe, Middle East, and Africa	33 (0) 1 46 25 19 07
Asia Pacific	(65) 6548 4116 or (65) 6548 4182
China	(86) 400-886-5598
India	(800) 102-7869

http://www.printronix.com/supplies-parts.aspx

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